Naval Air Station NORTH ISLAND

SITE
SUPERFUND INNOVATIVE TECHNOLOGY EVALUATION

Fact Sheet No. 2 April 1994

This fact sheet will tell you about...

- The SITE demonstration of the Terra-Kleen Mobile Solvent Extraction Unit scheduled to occur in May 1994 at NASNI, Site 4.
- A public Visitors' Day for the SITE demonstration, which is scheduled for May 25, 1994 at NASNI. To attend the Visitors' Day, complete the enclosed registration form.
- How you can obtain more information and become involved in base cleanup activities.

Introduction

Naval Air Station North Island (NASNI) is demonstrating a new cleanup technology in conjunction with the U.S. Environmental Protection Agency (EPA) and Terra-Kleen Response Group, Inc. (Terra-Kleen). NASNI has been designated by the Secretary of the Navy as one of two Naval Environmental Leadership Program (NELP) facilities. The objective of NELP is to demonstrate innovative cleanup technologies and to help export successful technologies to other naval facilities.

The EPA identifies new methods for hazardous waste cleanup through its Superfund Innovative Technology Evaluation (SITE) Program. Created in 1986, this program demonstrates and evaluates innovative treatment technologies that may significantly reduce the toxicity, mobility, or volume of hazardous waste. The SITE Program also generates reliable performance and cost information on the technologies for use in evaluating cleanup alternatives for similarly contaminated sites. Because NELP and the SITE Program have similar goals, the two programs combined their efforts to demonstrate the Terra-Kleen system.

The technology proposed for demonstration at NASNI is the mobile solvent extraction unit developed by Terra-Kleen. The purpose of the demonstration is to determine the system's effectiveness in removing polychlorinated biphenyls (PCB) from soil at Site 4 on NASNI, in Coronado, California. A pilot-scale system successfully treated one ton of soil from Site 4 in October 1993 at Terra-Kleen's facility in Okmulgee, Oklahoma. The demonstration at NASNI will evaluate the system under field operating conditions.

EPA's SITE Program

Each year, EPA solicits proposals from private technology developers to demonstrate innovative technologies under the SITE Program. For each technology selected, EPA performs the following tasks, often with input from state and regional agencies:

- Identifies a site with wastes suitable for treatment
- Prepares a quality assurance project plan
- Notifies appropriate agencies for intergovernmental and community reviews
- Prepares a fact sheet for the public that proposes the demonstration site
- Prepares the demonstration site
- Conducts and audits field sampling and laboratory analyses
- Organizes a Visitor's Day for the public to view the technology demonstration
- Evaluates technology performance
- Prepares an Innovative Technology Evaluation Report which summarizes the demonstration results, as well as a technology capsule, demonstration bulletin, and a videotape

Technology Description

The Terra-Kleen technology uses a non-hazardous proprietary solvent to remove PCBs and other organic contaminants from soil. Soil treatment at Site 4 will involve three steps: (1) soil treatment, (2)

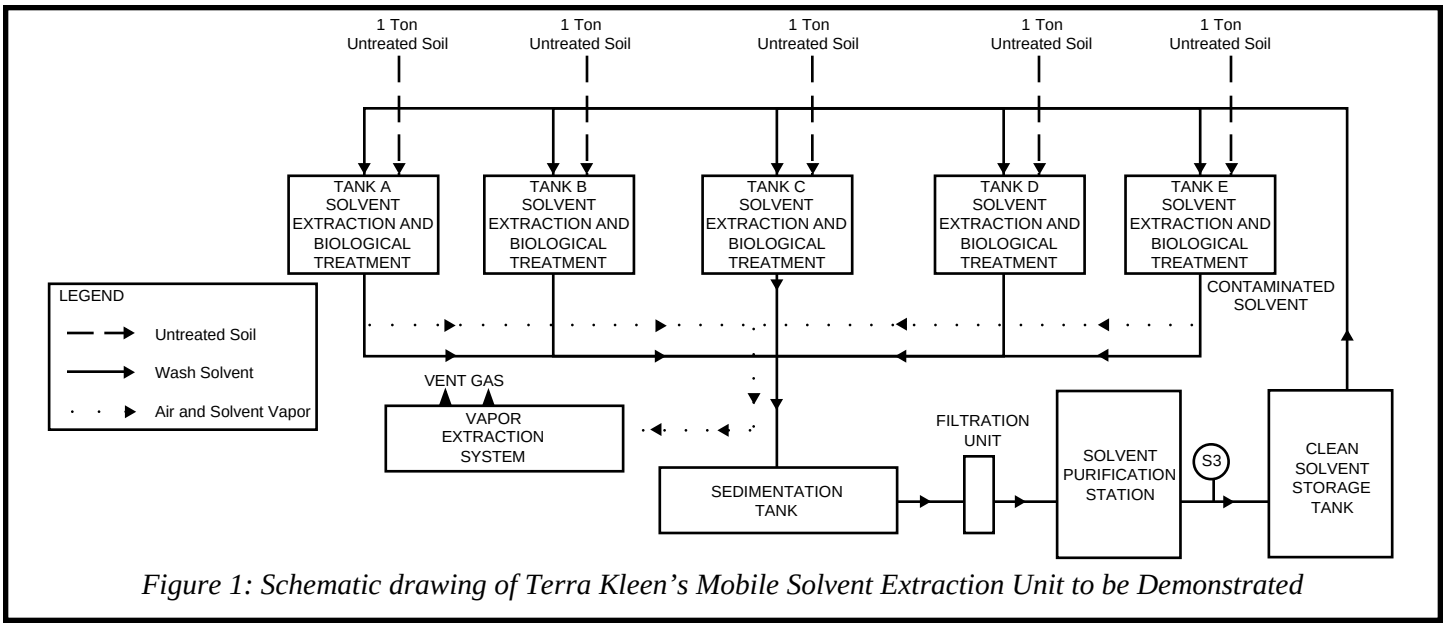

Figure 1: Schematic drawing of Terra Kleen's Mobile Solvent Extraction Unit to be Demonstrated

solvent regeneration, and (3) residual solvent removal (see Figure 1). These three steps are discussed below.

Soil Treatment

A backhoe is used to transfer contaminated soil into a solvent extraction tank for treatment. The proprietary solvent is pumped into the tank, where it comes in contact with the soil and dissolves contaminants into a solution. The solvent solution is then removed from the extraction tank and transferred to the solvent recovery system. The removal time depends on the specific soil composition; however, Terra-Kleen estimates that solvent removal for soil from Site 4 will occur within 8 hours.

Solvent Regeneration

The solvent recovery system consists of two elements: (1) a sedimentation tank that separates particulates from the solvent and (2) a solvent purification station that separates organic contaminants from the solvent. A mixture is added to the solvent in the sedimentation tank to promote settling of particles. Solvent is then pumped to the purification station to remove remaining soil particulates and organic contaminants. Clean solvent exits the purification station and is pumped to a solvent storage tank for use in subsequent soil treatments.

Residual Solvent Removal

Following the final soil treatment, the residual solvent is removed from the soil by a vacuum system that pulls air through the soil in the extraction tank. Following vapor collection, a bacteria culture is introduced to the soil to promote biodegradation of the residual nonhazardous solvent. Solvent vapor exiting the tanks is entrapped in a filter prior to release to the atmosphere.

Site History

NASNI is located at the northern end of the peninsula that forms the San Diego Bay and borders the city of Coronado. The 2,806-acre complex is accessible from San Diego via the 2-mile-long Bay Bridge or from the city of Imperial Beach via the Silver Strand Highway (State Route 75).

NASNI was officially commissioned in 1917. Its mission is to maintain and operate facilities and provide services and material to support the operation of aviation activities and naval units as designated by the Chief of Naval Operations. Although most operations at NASNI began in the 1920s, large quantities of hazardous waste were not generated until the 1940's during World War II. Several types of aircraft have been serviced by NASNI over the years; fleet helicopter and jet aircraft squadrons are currently based at the air station.

The U.S. Navy is investigating hazardous waste contamination at NASNI as part of its Installation Restoration (IR) Program. Under the IR Program, a preliminary assessment of NASNI was conducted and 12 potentially contaminated areas were identified for further investigation. For more information on the IR Program, see NASNI Fact Sheet No. 1 (February 1992).

Terra-Kleen's technology will be demonstrated at Site 4 on NASNI (see Figure 2), which was identified as a potentially contaminated area under the IR Program. Site 4 consists of a 3-acre, unpaved, former salvage yard, located adjacent to a golf course. From 1967 to 1976, the site was used to store miscellaneous materials, including 200 electrical transformers, 52 of which contained PCBs. Soils at Site 4 are contaminated with heavy metal, volatile organic compounds, semivolatile organic compounds (including polynuclear aromatic hydrocarbons), PCBs (Aroclor 1260), dioxins, and furans.

Technology Demonstration

During the SITE demonstration, the Terra-Kleen system will remove PCBs (Aroclor 1260) from 5 tons of soil from Site 4. Contaminants not treated by the system will remain on Site 4 and will be cleaned up under the IR Program.

The Terra-Kleen demonstration is scheduled to begin in May 1994 and will last about 2 weeks. EPA has prepared a detailed quality assurance project plan outlining methods and procedures for testing and evaluating the technology. The demonstration's primary objective is to determine the Terra-Kleen technology's capability to reduce PCBs (Aroclor 1260) concentrations to below 2 milligrams per kilogram.

Secondary objectives for the demonstration are to:

- Evaluate the removal of other contaminants in soil treated by the system
- Document the characteristics of Site 4 soil that may affect system performance
- Document system operating parameters
- Document that, following treatment, the regenerated solvent is acceptable for application at other PCB-contaminated sites.
- Evaluate operating costs of the Terra-Kleen system

When the demonstration is complete, results will be compiled and analyzed in an Innovative Technology Evaluation Report, technology capsule, and demonstration bulletin. These reports will provide an evaluation of the system as an alternative technology for cleaning up similar sites across the country. To obtain copies of these reports, contact the EPA Project Manager, Mark Meckes, at 513-569-7348.

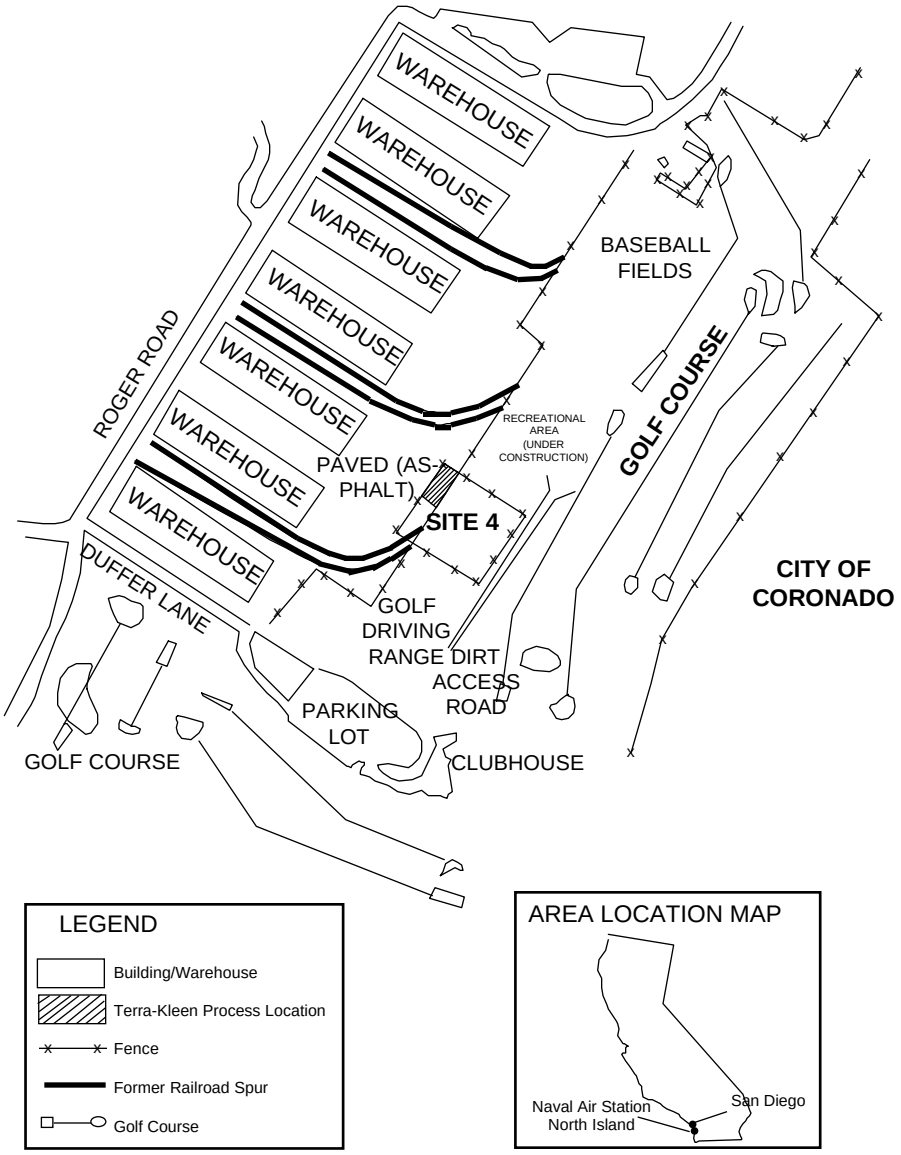

Figure 2: Naval Air Station North Island Site 4

MAILING LIST

If you did not receive this fact sheet in the mail, then you are not on our mailing list. If you wish to be placed on the Naval Air Station, North Island site activity mailing list, please complete this form, detach, and mail to:

Ken Mitchell
Public Affairs Officer
Naval Air Station, North Island
Building 605
San Diego, CA 92135

Name _____
Address _____
City _____ State _____ Zip _____
Phone (_____) _____
Affiliation _____

Community Relations Program

This fact sheet is part of a continuing effort to keep the public informed of environmental cleanup activities occurring at NASNI. During this SITE demonstration, the public is invited to attend a Visitors' Day scheduled for May 25, 1994. The Visitors' Day will enable the community to become familiar with the ongoing cleanup process at the base and will present more detailed information about the Terra Kleen technology. To attend the Visitors' Day, complete the enclosed registration form.

The basic goals of the Community Relations Program are to (1) inform the community about investigation and environmental cleanup activities occurring at NASNI and (2) provide the community with opportunities to comment on these activities. To accomplish these goals, community meetings and public comment periods will be held at critical decision points in the cleanup process. These meetings and comment periods give the community an opportunity to review and comment on proposed cleanup alternatives before a decision is made. During a public comment period, concerns voiced by the community will be responded to in writing and summarized in a document called the Responsiveness Summary.

The community will be notified of the opportunity to participate in meetings and comment periods through mailings, advertisements in local papers, including the North Islander, and announcements on local radio stations.

Additional Information

Questions or comments about the proposed demonstration should be received by May 2, 1994 and should be directed to the EPA project manager, Mark Meckes. Specific questions regarding the NASNI Installation Restoration Program, NELP Initiative, the demonstration site, the SITE Program, or the technology should be directed to the following individuals:

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